

A NEW SPECIES OF *EOTMETHIS* BEI-BIENKO FROM GANSU, CHINA (ORTHOPTERA, ACRIDOIDEA, PAMPHAGIDAE)

YIN Xiang-Chu^{1,2,3}, LI Xin-Jiang¹

1. College of Life Sciences, Hebei University, Baoding 071002, China; E-mail: yxch@hbu.edu.cn, yxch@sdu.edu.cn

2. Northwest Plateau Institute of Biology, Chinese Academy of Sciences, Xining 810001, China

3. College of Plant Protection, Shandong Agricultural University, Taian 271018, China

Abstract A new species of the genus *Eotmethis* Bei-Binko, 1948, namely *Eotmethis unicolor* sp. nov. is described from Gansu, China in this paper. The new species is similar to *Eotmethis nasutus* Bei-Bienko, 1948, but differs from the latter in the body with simple color, hind femur without two dark bands on outer side, lower area of hind femur on inner side all red, spines of hind tibia red on inner side and hind tarsus red. The new species is also similar to *Eotmethis rufemarginis* Zheng, 1985, but differs from the latter in the tegmina reaching to the 6th abdominal tergite only in male; the transverse diameter of eye is 2.2 times the length of frontal ridge projection; hind femur without two dark bands on outer side and hind tarsus red.

Key words Orthoptera, Pamphagidae, *Eotmethis*, new species.

The genus *Eotmethis* Bei-Binko, 1948 belongs to subfamily Prionotropisinae, family Pamphagidae, superfamily Acridoidea (Zhang et al., 2003), and is mainly distributed in Northwest China, especially in Gansu, Shaanxi, Ningxia and West of Neimenggu. Up to now, there are 7 species [*E. nasutus* Bei-Bienko, 1948; *E. tientsuensis* (Chang, 1978); *E. holanensis* Zheng et Gow, 1981; *E. jingtaiensis* Xi et Zheng, 1984; *E. rufemarginis* Zheng, 1985; *E. recipennis* Xi et Zheng, 1986 and *E. ningxiaensis* Zheng et Fu, 1989] recorded from China (Bei-Bienko, 1948; Bei-Bienko et Mishchenko, 1951; Chang et al., 1978; Zheng et Gow, 1981; Xi et Zheng, 1984; Zheng, 1985; Xi et Zheng, 1986; Zheng et Fu, 1989; Zheng, 1993; Xia et al., 1994; Yin et al., 1996; Eades et al., 2011). In Orthoptera species file (Version 2.0/4.0), there are also 7 species in the genus *Eotmethis* (Eades et al., 2011), but *E. rufitibialis* Xi et Zheng, 1984 is synonym of *E. tientsuensis* (Chang, 1978) (Xia et al., 1994) and lacking *E. tientsuensis* (Chang, 1978).

During identifying the specimens of grasshoppers collected from Gansu, China in July 2006, a new species of the genus *Eotmethis*, i. e. *Eotmethis unicolor* sp. nov. was found and is described below. The type specimen is deposited in College of Life Sciences, Hebei University, Baoding, China.

Eotmethis unicolor sp. nov. (Figs 1 – 5)

Holotype ♂, Jingtai, Gansu (37° 13' N, 103° 52' E; alt. 1 850 m), 18 July 2006, collected by LI Xin-Jiang and ZHENG Jin-Yu.

Male. Body medium-size, thickset, with hairs, especially noticeable on the legs. Vertex short and

wide, the width between eyes is about 4 times as wide as width of frontal ridge between the base of antennae; lateral aspects of vertex edged by distinct carina, extending to behind of eye; fastigial furrow present. Vertex and dorsal side of head depressed, with small granular. Frontal ridge distinct, whole length with a groove, narrow upper the median ocellus, widen gently downwards, the widest near the base of labrum, between the bases of antennae slightly projecting forward, the transverse diameter of eye is 2.2 times the length of projection. Lateral facial carinae distinct. Eyes larger, near circle. Antennae longer, 18 segments, almost reaching to the hind margin of pronotum, length about 2.0 – 2.5 times width of the middle part. Pronotum rough, with short subuliform projection, anterior and posterior margin angled protruding; median carina elevating into lamellate, strongly incised by the posterior transverse sulcus; the length of metazona is 1.1 times the length of prozona, in prozona the carina is cut by the 2 transverse sulci, in metazona the carina arc-like raised. Prosternum with a strong lamellate process on the anterior margin which emarginated in the middle part. Interspace of mesosternum lateral lobes trapezoid, wider, the width of narrowest part larger than width of lateral lobes broadest part. Tegmina and hindwings shorter, the apex reaching to the 6th abdominal tergite, median vein area wider than cubital vein area distinctly in tegmen. Hind femur wide and compressed, length is 3 times the width of broadest part; median carina of hind femur on the upper side serrate. Hind tibia with 10 spines on the outer side and 9 spines on inner side (including apical spine). Arolium between the claws

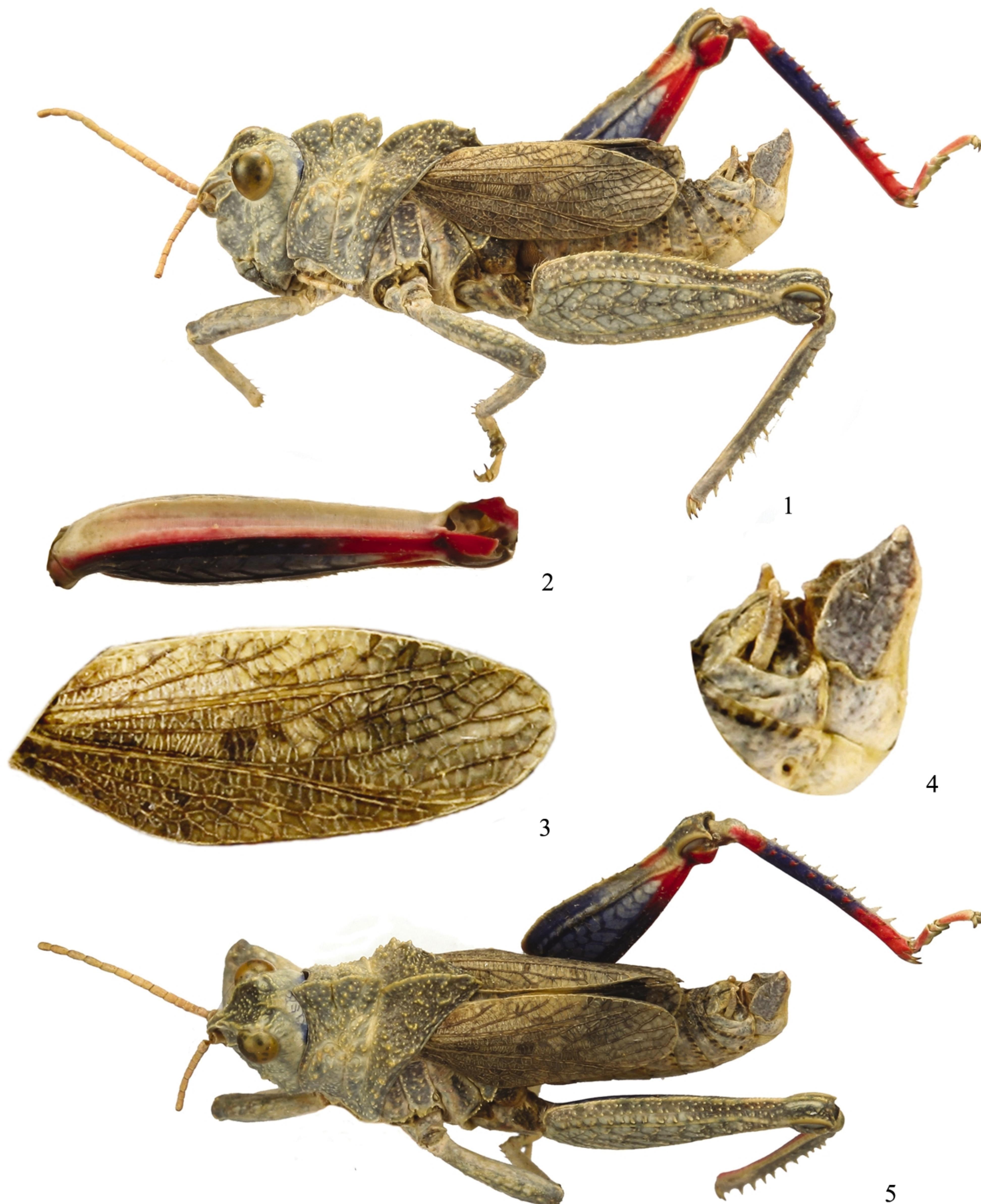
This study was supported by the National Natural Science Foundation of China (30770263) and Foundation of Chinese Academy of Sciences (KSCX2-YW-Z).

Received 28 Feb. 2010, accepted 16 May 2011.

of hind tarsus larger, extending beyond the middle of claws. Tympanum organ developed, tympanal aperture expanded, tympanic flap larger. Krause's organ near ellipse, with thinly rugose on surface. Abdomen dorsally with 3 rows of tubercles, the middle row plate-like distinctly. Epiproct near tongue-like, with longitudinal groove in middle. Cercus long conical, extending over the end of epiproct. Subgenital

plate conical.

Coloration. Body grey. Without two dark bands on hind femur outer side. Inner side of hind femur dark blue, red in pregenicula, lower area of hind femur on inner side all red. Inner side of hind tibia red on the base and end, dark blue in the middle, spines red on inner side. Tarsus red.



Figs 1 – 5. *Eotmethis unicolor* sp. nov., ♂. 1. Body lateral view. 2. Hind femur ventral view. 3. Tegmen. 4. End of abdomen lateral view. 5. Body dorsal view.

Table 1. Main morphological differences between *Eotmethis unicolor* sp. nov. and *E. nasutus*.

Character	<i>Eotmethis unicolor</i> sp. nov.	<i>E. nasutus</i>
Coloration of body	Simple color	With yellow and black stripe
Outer side of hind femur	Without two dark band	With two dark bands
Lower area of hind femur on inner side	Red in all	Red in distal third only
Spines of hind tibia on inner side	Red	Yellow
Hind tarsus	Red	Yellowish-brown

Table 2. Main morphological differences between *E. unicolor* sp. nov. and *E. rufemarginis*.

	<i>E. rufemarginis</i>	<i>E. unicolor</i> sp. nov.
Tegmina in male	Longer, reaching to the 10 th abdominal tergite	Shorter, reaching to the 6 th abdominal tergite only
Projection of frontal ridge between antennae	The transverse diameter of eye is 1.8 – 2.0 times the length of projection	The transverse diameter of eye is 2.2 times the length of projection
Outer side of hind femur	With two dark bands	Without two dark bands
Hind tarsus	Yellowish-brown	Red

Female. Unknown.

Measurement (in mm). ♂. Length of body 25.5, length of tegmen 11.3, length of hind femur 13.0.

Diagnosis. The new species is similar to *E. nasutus* and *E. rufemarginis*, but with several differences listed in Tables 1 and 2.

Etymology. The specific epithet is named for coloration of body, *unicolor* meaning simple color.

Acknowledgements We thank Mr. ZHENG Jin-Yu for collecting the type specimen.

REFERENCES

- Bei-Bienko, G. J. (Y.) 1948. Acridids of the tribe Thrinchini (Orthoptera: Acrididae), collected by Russian investigators in Mongolia and limitrophic China. *Ent. Obozr.*, Moscow, 30: 3 – 16, 10 figs.
- Bei-Bienko, G. J. (Ya.) and Mishchenko, L. L. 1951. Acridoidea of the fauna of the USSR and neighbouring countries. Pts. 1 Opred. Faune SSSR, Moscow. pp. 283, 321 – 322, figs 595, 639.
- Chang, H-L, Wang, C-C and Kan, T-L 1978. A study on the Locusts of Lanchow and its vicinity with description of a new species of Pamphagidae (Orthoptera: Acridoidea). *Acta Entomologica Sinica*, 21 (3): 320 – 324.
- Eades, D. C., Otte, D., Cigliano, M. M. and Braun, H. 2011. Orthoptera Species File Online. Version 2.0/4.0. < <http://Orthoptera.SpeciesFile.org> >.
- Xi, G-S and Zheng, Z-M 1984. New species of Pamphagidae from Gansu. *Entomotaxonomia*, 6 (1): 37 – 42.
- Xi, G-S and Zheng, Z-M 1986. Two new species of grasshoppers from Nei Mongol Autonomous Region (Orthoptera: Pamphagidae). *Acta Entomologica Sinica*, 29 (2): 190 – 193.
- Xia, K-L et al. 1994. Fauna Sinica, Insecta, Vol. 4, Orthoptera Acridoidea: Pamphagidae, Chrotogonidae and Pyrgomorphidae. Science Press, Beijing. pp. 220 – 228.
- Yin, X-C, Shi, J-P and Yin, Z 1996. A Synonymic Catalogue of Grasshoppers and Their Allies of the World. China Forestry Publishing House, Beijing. pp. 258 – 259.
- Zhang, D-C, Yin, H and Yin, X-C 2003. On the taxonomic system of Eurasian Pamphagidae (Orthoptera: Caelifera). *Acta Entomologica Sinica*, 46 (2): 218 – 221.
- Zheng, Z-M 1985. A new species of Pamphagidae from Shaanxi. *Journal of Shaanxi Teachers University*, 2: 82 – 85.
- Zheng, Z-M 1993. Taxonomy of Acrididae. Shaanxi Normal University Press, Xi'an, China. pp. 33 – 36.
- Zheng, Z-M and Fu, P 1989. Two new species of grasshoppers (Pamphagidae) from China. *Journal of Shaanxi Teachers University*, 17 (1): 64 – 69.
- Zheng, Z-M and Gow, C-N 1981. New species of grasshoppers from Ningsia-Kansu Region. *Acta Entomologica Sinica*, 24 (1): 72 – 77.

中国甘肃突颜蝗属一新种（直翅目，蝗总科，癩蝗科）

印象初^{1,2,3} 李新江¹

1. 河北大学生命科学学院 保定 071002; E-mail: yxch@hbu.edu.cn, yxch@sdau.edu.cn

2. 中国科学院西北高原生物研究所 西宁 810008

3. 山东农业大学植物保护学院 泰安 271018

摘要 记述了采自甘肃的突颜蝗属1新种，素色突颜蝗 *Eotmethis unicolor* sp. nov., 新种与突颜蝗 *E. nasutus* Bei-Bienko, 1948 近似，区别特征为：体色单一，后足股节外侧无暗色斑纹，后股节内侧下缘全长具红色细边，后足胫节刺内侧红色，后足跗节红色。新种也与红缘突颜蝗 *Eotmethis rufemarginis* Zheng, 1985 近似，区别特征为：雄性前翅到达腹部第6节背板，复眼的横径是颜面隆起在触角基部中间突起长度的

2.2倍，后足股节外侧缺2个黑色斑块，后足跗节红色。模式标本保存于河北大学生命科学学院。

正模♂，甘肃景泰，海拔1850 m, 2006-07-18，李新江，郑金玉采。

词源：新种名出自拉丁前缀 *uni-* (单一)，后缀 *-color* (颜色)，示体色单一(素色)的突颜蝗。

关键词 直翅目，癩蝗科，突颜蝗属，新种。

中图分类号 Q969.265.1